

Name: \_\_\_\_\_

**Unit 9: Transformations**

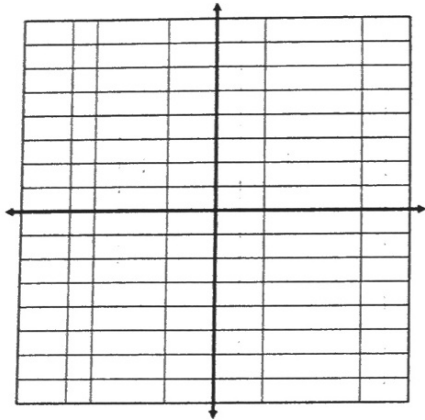
Date: \_\_\_\_\_ Bell: \_\_\_\_\_

**Homework 2: Translations**

**\*\* This is a 2-page document! \*\***

**Directions:** Graph and label each figure and its image under the given translation. Give the new coordinates.

1. Trapezoid  $STUV$  with vertices  $S(-3, 6)$ ,  $T(0, 7)$ ,  $U(1, 4)$ , and  $V(-5, 2)$ :  $(x, y) \rightarrow (x + 7, y - 9)$



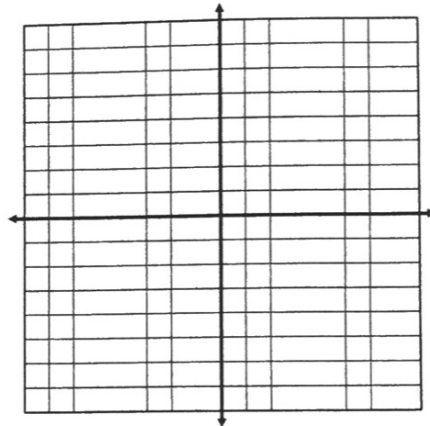
$S' ( \quad, \quad )$

$T' ( \quad, \quad )$

$U' ( \quad, \quad )$

$V' ( \quad, \quad )$

2. Triangle  $ABC$  with vertices  $A(0, 7)$ ,  $B(7, 3)$ , and  $C(1, 4)$ :  $(x, y) \rightarrow (x - 3, y - 4)$

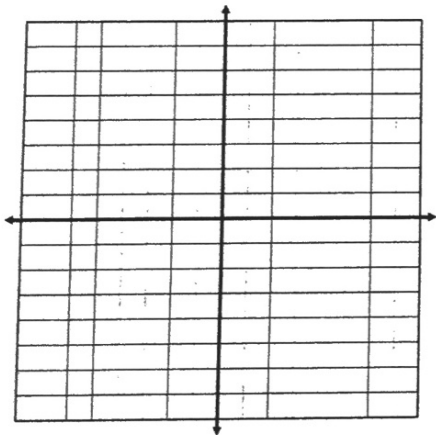


$A' ( \quad, \quad )$

$B' ( \quad, \quad )$

$C' ( \quad, \quad )$

3. Rhombus  $KLMN$  with vertices  $K(-3, 2)$ ,  $L(1, 4)$ ,  $M(-1, 0)$ , and  $N(-5, -2)$ :  $(x, y) \rightarrow (x + 2, y - 5)$



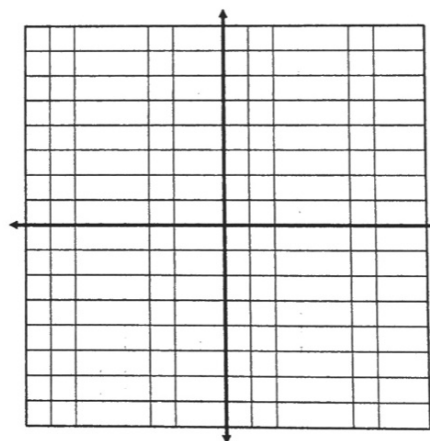
$K' ( \quad, \quad )$

$L' ( \quad, \quad )$

$M' ( \quad, \quad )$

$N' ( \quad, \quad )$

4. Rectangle  $DEFG$  with vertices  $D(-4, 3)$ ,  $E(0, 2)$ ,  $F(-2, -6)$ , and  $G(-6, -5)$ :  $(x, y) \rightarrow (x + 4, y + 1)$



$D' ( \quad, \quad )$

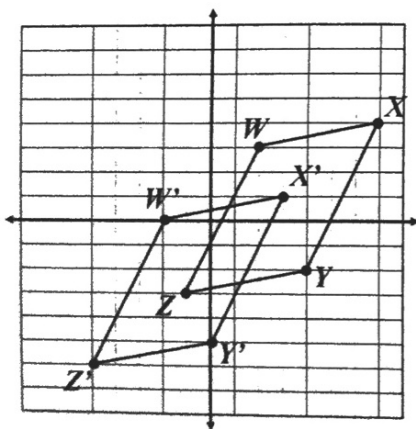
$E' ( \quad, \quad )$

$F' ( \quad, \quad )$

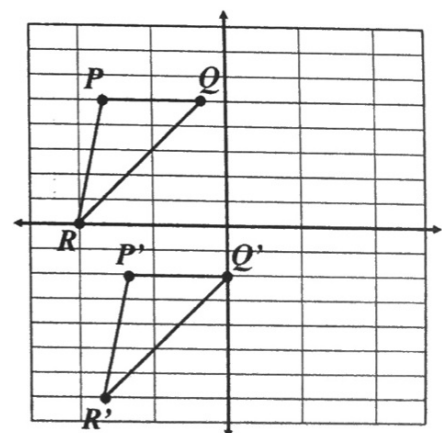
$G' ( \quad, \quad )$

**Directions:** Write a rule describing each translation below.

5.



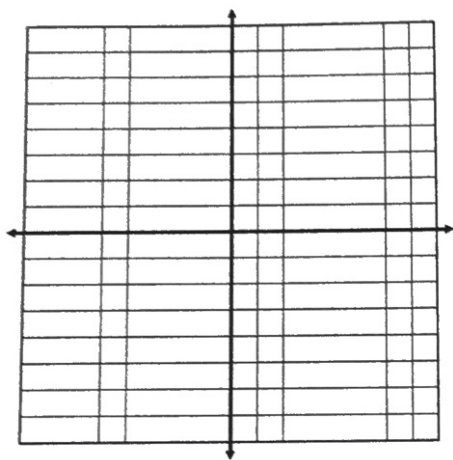
6.



**Directions:** Graph and label each figure and its image under the given transformation.  
Give the new coordinates.

- 7** Square  $TUVW$  with vertices  $T(-6, 1)$ ,  $U(-1, 0)$ ,  $V(-2, -5)$ , and  $W(-7, -4)$ :

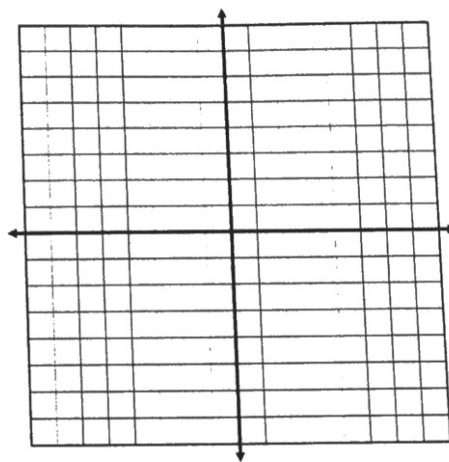
- (a) Reflection: in the  $y$ -axis  
(b) Translation:  $(x, y) \rightarrow (x - 5, y + 7)$



$T'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$   
 $U'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$   
 $V'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$   
 $W'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$

- 8.** Triangle  $FGH$  with vertices  $F(6, 6)$ ,  $G(8, 8)$ , and  $H(8, 3)$ :

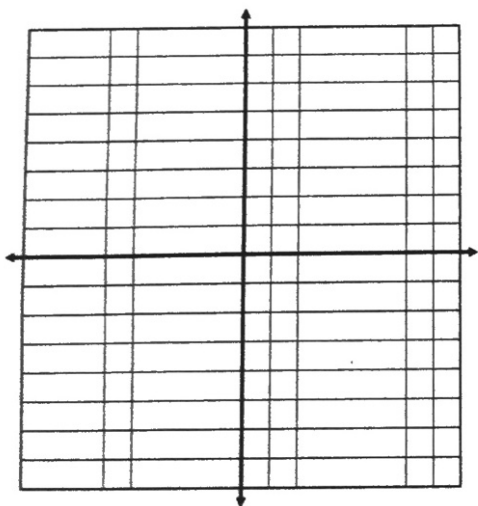
- (a) Reflection: in the line  $x = 5$   
(b) Translation:  $(x, y) \rightarrow (x - 7, y - 9)$



$F'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$   
 $G'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$   
 $H'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$

- 9.** Triangle  $LMN$  with vertices  $L(-7, 4)$ ,  $M(-3, 0)$ , and  $N(-8, 1)$ :

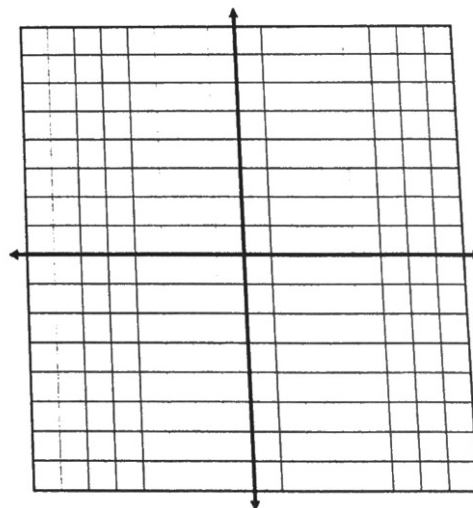
- (a) Translation:  $(x, y) \rightarrow (x + 5, y - 6)$   
(b) Reflection: in the line  $y = -x$



$L'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$   
 $M'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$   
 $N'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$

- 10.** Rectangle  $ABCD$  with vertices  $A(1, 0)$ ,  $B(7, 2)$ ,  $C(8, -1)$ , and  $D(2, -3)$ :

- (a) Translation:  $(x, y) \rightarrow (x - 8, y - 3)$   
(b) Reflection: in the  $x$ -axis



$A'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$   
 $B'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$   
 $C'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$   
 $D'(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$